

Remarks/Arguments

Status of the Application

Claims 1-30 are pending in the application. Claims 2, 4 and 22-25 are withdrawn from consideration as addressed to unelected subject matter following election/restriction.

Claims 1, 3, 5-21 and 26-30 remain pending in the application. The pending claims stand rejected.

Claim Amendments

Claim 1 is amended to change “consists essentially of” and “consisting of” to “comprises” and to change “functional” to “crosslinkable”. In addition, the claim is amended to specify that the functional methacrylate monomers are present in an effective amount for producing a copolymer having on average 2 to 25 crosslinkable groups and that the copolymer is produced by free radical polymerization of the monomer mixture at a polymerization temperature ranging from 120° C to 300° C. The amendments are supported, *inter alia*, by original claim language, and in the specification, page 2, line 25 to page 3, line 3; and page 8, lines 14-19.

Claims 13 and 14 are amended to change “further consists of” to “comprises”. This amendment reverts to some of the original claim terminology.

Claims 19, 20 and 21 are amended to change claim dependency from canceled claim 18 to claim 1.

Claim 26 is amended to change “comprises” to “consists essentially of” and to insert “non-” before “functional” in line 12 to correct an error of omission.

No new matter is being introduced by the claim amendments.

Claims 1 and 26 are independent claims.

Claim Rejections – 35 USC § 112

Claims 1, 3, 5-21 and 26-30 stand rejected under 35 USC § 112[2] as indefinite. To advance the prosecution, Applicants have changed “consisting of” or “consists essentially of” back to “comprising”.

Applicants respectfully submit that these amendments should overcome the § 112 rejections.

Claim Rejections – 35 USC § 102

Claims 1, 3, 5-11, 13-21 and 26-30 stand rejected as allegedly anticipated by Rink et al., US 6,013,739.

Applicants respectfully submit that at the very least, the present claim amendments demonstrate novelty over Rink, without conceding the merits of prior rejections over Rink.

Polymers disclosed in Rink are different from the polymers in the instant application based on the following facts:

(1) **Different Mw.** Rink's polymers have Mw over 4900 (Mn 1900 – 2200) (Rink et al, Table 2). Instant invention requires Mw 1000 – 4500. Rink requires high weight average molecular weight (M_w) to assure adequate functionality.

It is further to be noted that although Rink generically described polymers having Mn 1000 – 5000 (**Note: this refers to Mn, number average molecular weight, not Mw, weight average molecular weight**), but there is no evidence that Mw less than 4500 was produced in Rink.

These facts clearly demonstrate that the polymers disclosed in Rink et al are distinctive from the polymers instant disclosure and claims.

(2) **Different monomer composition.**

In addition, Rink et al require more than **both** functional acrylate and functional methacrylate monomers (Col. 3, line 66 to Col. 4, line 10).

Rink et al specifically require **more than 10%** non-functional methacrylate monomers at the level of about **62% MMA** (Table 1, col. 14).

Based on these facts, monomer compositions in Rink is different from the instant claimed subject matter. These facts actually teach away from the instant invention that requires less than 10% non-functional methacrylate (Page 7, lines 23 - 32) and requires only functional methacrylate monomers. Claim 1 is amended to include this limitation. This is discussed further, below.

Given that the elements of amended claims 1 and 26 do not read on Rink, these claims and their dependent claims are novel.

Claim Rejections – 35 USC § 103

Claim 12 stands rejected as allegedly obvious over Rink in view of Roesler et al., US 2003/0232942 A1. Claim 12 depends directly from claim 1, as currently amended. Applicants respectfully submit that claim 1 has been demonstrated to be novel; it is not rejected under this statute, therefore, it is concededly non-obvious over Rink and Roesler.

Rink discloses polymers having weight molecular weight higher than the polymers of the instant invention. Rink fails to teach a polymer having low molecular weight of Mw 1000 to 4500 and high number of functional groups of 2 to 25 functional groups. There is no teaching in Rink that the polymer of the instant invention could have been made. Rink specifically teaches the use of more than 10% non-functional methacrylate (62%, Table 1). This fact teaches away the instant invention that requires less than 10% non-functional methacrylate monomers. Accordingly, no combination of Rink and Roesler can overcome the defects of either, alone or in combination, to arrive at the subject matter of claim 12. At the very least, without conceding the merits of the present rejection of claim 12, since claim 12 depends directly from an assertedly novel independent claim which is concededly non-obvious, claim 12 further patentably defines over the prior art and is both novel and non-obvious.

Conclusion

Should the Examiner have questions about the status of the application or the contents of this paper, the Examiner is invited to call the undersigned at the telephone number listed below.

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Respectfully submitted,

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